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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

Federal Communications Commission  
Office of the Secretary

In the Matter of )

Amendment of Parts 2, 22 and )  
25 of the Commission's Rules to )  
Allocate Spectrum for the )  
Mobile Satellite Service )

RM No. 7806

ORIGINAL  
FILE

In the Matter of the Application )  
of AMSC Subsidiary Corporation )  
For Modification of Authorization )  
to Add the 1515-1525 MHz Band )

**CONSOLIDATED COMMENTS AND PETITION TO DENY OF  
SATELLITE CD RADIO**

On June 3, 1991, American Mobile Satellite Corporation (AMSC) filed the above-referenced Petition for Rulemaking to allocate the 1515-1525 MHz band (among others) to the Mobile Satellite Service and the above-referenced Application to modify its existing permits to construct its system in the 1515-1525 MHz band. Despite the fact that Satellite CD Radio has an Application accepted for filing and through Public Notice for the 1470-1530 MHz band, AMSC failed to serve Satellite CD Radio with its above-described filings.

Satellite CD Radio is vigorously opposed to the above-described AMSC filings. Our consolidated comments and Petition to Deny are timely filed today because October 16, 1991 is the comments date for the Petition for Rulemaking portion of AMSC's consolidated filing, and due to AMSC's failure of service contrary to the requirements of the Commission Rules.

## **SUMMARY**

AMSC's Petition should be dismissed without further consideration and its Application consolidated therewith should be promptly denied. The Petition should be dismissed because it fails to make even a minimal showing that the 1515-1525 MHz band is required by AMSC to serve its market. Even if 10 MHz additional bandwidth were required by AMSC, the Petition fails entirely to demonstrate why the 1515-1525 MHz band is needed as compared to other frequencies identified by AMSC as clearly acceptable to it. Finally, AMSC completely failed to make the required public interest analysis comparing the benefits from its use of the 1515-1525 MHz band with that of the intended service for that band, the Satellite Digital Audio Radio Service, which identified, justified and pioneered use of the 1470-1530 MHz band in the U.S. for satellite systems. The public interest, as expressed to the FCC in Comments, already overwhelmingly favors use of the 1515-1525 MHz band for Satellite CD Radio.

The Application AMSC consolidated with its Petition must be dismissed because extending AMSC's monopoly into a new band is without legal qualification and is contrary to the public interest. Fundamentally, AMSC is trying to keep an obsolete, spectrum-guzzling non-LEO MSS technology alive with more and more spectrum. But in so doing, AMSC is blocking new technologies such as Satellite CD Radio and Iridium. This is unfair and wrong.

# **I. AMSC WOEFULLY FAILS TO MEET THE THRESHOLD CRITERIA ESTABLISHED BY THE COMMISSION FOR A FREQUENCY ALLOCATION**

Fundamental requirements for a frequency allocation have been established by the Commission over the years. These requirements include:

- Proof that the spectrum is needed for the service;
- Evidence that alternative spectrum is as suitable;
- Evidence that the proposed new service would provide greater public interest benefits than any service displaced;
- Evidence that the proposed new service would provide greater public interest benefits than any other service that might also use the frequencies.

AMSC has failed to demonstrate that it meets ANY of the above four criteria, much less all four of them. In brief, Motorola has already demonstrated that it can provide the same services as AMSC with a more efficient low earth orbit satellite system operating uplinks and downlinks in the same band (1616-1626 MHz). Hence the MSS does not need the 1515-1525 MHz band. Furthermore, AMSC itself in its Petition identifies at least three other frequency bands for downlinks other than the 1515-1525 MHz band. Hence the 1515-1525 MHz band is not uniquely needed for MSS. Finally, AMSC did not even address the worldwide emerging consensus, and the dozens of

U.S. public interest filings with the FCC, which all support the use of the 1515-1525 MHz band as part of an initial frequency allocation for the Satellite Sound Broadcasting Service.

**A. AMSC and the MSS Do Not Require the 1515-1525 MHz Band**

AMSC fails in its Petition to demonstrate why it requires the 1515-1525 MHz band. AMSC's only justification is that it is having difficulty coordinating its temporarily licensed frequencies with co-channel systems of other countries. However, AMSC does not allege that its coordination efforts have failed, nor does AMSC provide any specific indication of exactly how much bandwidth it has coordinated or expects to coordinate. AMSC has apparently coordinated enough spectrum to proceed with the construction of its satellite system. Hence, AMSC is obligated to demonstrate why the amount of spectrum it expects to coordinate is not adequate to serve its market, especially when faced with the loss of much of its market base to cellular communications (now covering 85% of the US Interstate Highway System) and "little" LEO systems (e.g. Orbcom, Starsys, Leosat). The Commission should not even consider AMSC's request until it refiles a properly documented Petition which specifies how much bandwidth it expects to coordinate, how much market it has left, and how long the coordinated spectrum can handle the market. None of these critical issues were even addressed in the hastily drawn AMSC Petition.

AMSC's only effort to justify, quantitatively, its grab for the 1515-1525 MHz band is a reference to a six-year old determination by the FCC that a domestic MSS system requires about 20 MHz to be viable. However, the Commission has already proposed to make that bandwidth available by adding the MSS as a second service to the two RDSS frequency bands. Thus, AMSC has provided no quantitative justification for its need for the 1515-1525 MHz band.

**B. AMSC AND THE MSS HAVE ALTERNATIVE FREQUENCIES TO THE  
1515-1525 MHZ BAND**

Assuming *arguendo* that AMSC does require an additional 10 MHz, the Petition utterly fails to make any kind of credible case for the 1515-1525 MHz band in particular. Indeed, the Petition and its Consolidated Application readily concede that the 1850-1990, 2110-2130 or 2160-2180 MHz bands could be used as well. Furthermore, there is no technical reason that the RDSS downlink band (2483-2500 MHz) could not also be used, except for AMSC's natural desire to reduce spacecraft costs. Finally, there is over 500 MHz of bandwidth available at 20 GHz, which NASA is proving capable of personal communications service via the ACTS program, and could thus be available to AMSC by the late 1990's. With so many alternative frequencies available, AMSC has provided no public interest justification for taking the 1515-1525 MHz band in particular.

AMSC's Petition alleges only one reason in defense of the 1515-1525 MHz band as compared to the 1800 and above frequency bands -- saving money on the spacecraft costs. How much is AMSC saving by using 1515-1525 instead of the higher bands? According to the Application consolidated with AMSC's Petition, the total savings will be less than \$10 million, or approximately one and one-half percent (01.5%) of the reported \$750,000,000 cost of the entire AMSC System. Will this \$10 million make any kind of difference in whether or not AMSC goes forward? Definately not, since AMSC's Application consolidated with AMSC's Petition includes a guarantee from multi-billion dollar McCaw Cellular that promises "additional equity in an amount up to the full \$20 million, if necessary, to finance these additional costs upon grant of the application by the FCC."

In summary, AMSC itself not only identifies alternative frequencies to the 1515-1525 MHz band, and fails to distinguish them other than on the basis of a very small difference in total system cost, but also promises to spend the incremental difference in system cost. It is apparent, therefore, that AMSC can use frequencies other than 1515-1525 MHz.

**C. AN INITIAL SATELLITE DIGITAL AUDIO RADIO ALLOCATION AT  
1515-1525 MHZ ENGENDERS GREATER PUBLIC INTEREST BENEFITS  
THAN DOES AN EXPANSION OF AMSC OR THE MSS**

The Commission has received dozens of filings in its Satellite CD Radio proceeding urging the creation of this new satellite service in the 1500 MHz band. These filings have come from an exceptionally broad cross-section of the public, ranging from General Motors to the Texas Association of Counties, from the Los Angeles Philharmonic to the Montana Farmers Bureau, from the Recreational Vehicle Industry Association to the pioneers of clear channel radio broadcasting. The common theme of these filings was that as America becomes ever-more geographically integrated, those persons living outside of urban centers (including exurban commuters) deserve to enjoy the same quality and quantity of radio programming as do city dwellers.

The Satellite CD Radio service, in the brief 18 months since the pioneering application was first filed, has captured worldwide attention as one of the most beneficent uses of satellite technology yet proposed. It is a truly nationwide, point-to-multipoint service that cannot be provided in any other way -- not via cellular, not via SMR, and not via terrestrial FM or AM radio.

Satellite CD Radio has repeatedly demonstrated in its filings, and never been challenged or proven incorrect by AMSC, that MSS cannot provide CD-quality satellite-to-car service at any sort of

economically reasonable rate. At AMSC's rates of around \$5 per minute for a 4800 bps channel, the standard 256 kb/s stereo CD channel would cost \$16,000 per hour -- compared to Satellite CD Radio Inc.'s offered price of \$100 per hour, which price meets with industry expectations. To allocate the 1515-1525 MHz band to AMSC would be to preclude a CD-quality satellite radio system, and to thereby undermine the clearly expressed public interest in the rapid implementation of the Satellite CD Radio system.

## **II. AMSC'S PETITION AND APPLICATION CONTAIN NUMEROUS ERRORS AND INACCURACIES, THE CLARIFICATION OF WHICH FURTHER UNDERMINES ANY CLAIM TO THE 1515-1525 MHZ BAND**

### **A. It is Not True that there is Enough Spectrum for Only AMSC**

AMSC begins its Consolidated Petition and Application with the blithe remark that "In 1985, the Commission decided that there was sufficient spectrum available to license only one MSS system to serve the United States. That fact remains true today." Both prongs of AMSC's remark are false. In 1985, the Commission decided that the *upper L-band* contained enough spectrum to authorize only one MSS system, not that only one MSS system should be authorized.

AMSC persists in promoting the false notion that the Commission granted it the MSS monopoly, which perception is seriously stifling the development of MSS in the United States. It is

also obvious that since several hybrid MSS/RDSS systems now claim mutual compatibility in the RDSS frequency bands (Loral, TRW, Constellation), there is no reason to license only one MSS system. So AMSC's entire premise for its Petition -- that it has a monopoly on MSS -- is a fiction that AMSC keeps promoting for business reasons. By simply authorizing more efficient MSS systems in the RDSS bands, such as Iridium, the entire premise for AMSC's Petition disappears.

#### B. AMSC Has Misstated The Abilities of Competing MSS Systems

In an over-exuberant grasp for arguments to bolster its spectrum claim, AMSC asserts at page 3 of its Petition that Motorola's Iridium system "must operate with such limited power that they have virtually no capacity...." Why would Motorola be spending millions of dollars building a business around a system with no capacity? Similarly, at note 5 of its Petition, AMSC dismisses the abilities of Inmarsat to serve the U.S. market by claiming that the U.S. "MSS system is expected to be used to provide sensitive communications to, among others, local, state and federal government agencies." This is especially puzzling since the National Security Agency is currently defending Intelsat's PSTN monopoly against PanAmSat's separate system claims, since the Navy makes regular use of Inmarsat, and since it is hard to imagine why California fire fighters, for example, would worry about sending phone calls via Inmarsat as compared to AMSC. Given government

funding pressures, the price benefits of Inmarsat competition to AMSC are probably the greatest governmental interest.

In general, AMSC's entire need for additional spectrum can be avoided by assuming that Inmarsat will compete in the U.S. market, as seems only fair and sensible. Inmarsat's ability to serve the U.S. market immediately brings all of Inmarsat's bandwidth to the table to serve our national needs. The Commission should reject AMSC's jingoistic allegations such as averred at note 5, that AMSC is the best way "to insure that the U.S. market gets its fair share of the limited available spectrum." Doesn't the U.S. market get just as much spectrum if it is delivered via Inmarsat or AMSC? The U.S. probably gets more benefit from spectrum delivered via Inmarsat because inter-system coordination losses are avoided. Furthermore, Comsat is the largest shareholder in Inmarsat, and the U.S. wins the lion's share of Inmarsat contracts.

#### C. AMSC REPEATEDLY CONFUSES ITS COMMERCIAL INTEREST WITH THE U.S. MSS INTEREST

One of the most astonishing remarks in AMSC's Petition was its comment, at page 5, that "Subsequent events have confirmed the virtue of the Commission's decision to license one MSS operator." Suffice to say, it is extremely unlikely that the same result would occur today. The consequence of licensing only one MSS operator to date has been the same monopolist abuses normally expected:

- AMSC self-deals with its shareholders, including the purported competitor to Satellite CD Radio, making it very difficult and unfair for third parties.
- AMSC has failed to implement a commercial system while paying Inmarsat \$2 million per year for interim capacity, yet competitive market systems such as Qualcomm and Geostar implemented commercial systems promptly upon FCC authorization.
- AMSC uses its pseudo-monopoly status to justify extensions of monopoly status, as did AT&T in its now discredited efforts to block MCI and Carterfone.

AMSC claims, at page 15 of its Petition, that the Commission's policy of licensing a viable MSS system "to provide service to the United States is in serious jeopardy due to the shortage of L-band spectrum." This is blatantly untrue. Motorola stands ready, willing and able to implement a viable MSS system in the already allocated RDSS band, subject only to a couple of waivers.

The greater and understandable problem faced by AMSC is that technology has already passed its system by, while it is still on the drawing boards. When the Commission invited hybrid MSS/RDSS proposals to be considered contemporaneously with those of Ellipsat and Iridium, several established companies applied -- but NONE of them (except AMSC) proposed a geostationary configuration. The Commission had not required low earth orbit systems -- it was the natural result of engineers and businesspeople at firms such as

Loral, TRW, Qualcomm and others all coming to the independent conclusion that MSS is most efficiently provided via low earth orbit.

Lest there be any doubt on what the industry believes is state-of-the-art for MSS, the giant of the field, Inmarsat, has now announced that its personal satellite telephone system will be based upon low earth orbit satellites.

Unfortunately for AMSC, it appears to be forced to purchase a prematurely obsolete satellite configuration and, like the gas guzzlers of old, needs to be fed ever-more spectrum to stay afloat. But the spectrum is a much more scarce and valuable resource than is gasoline, and the public interest obligation of the Commission clearly mandates using any MSS spectrum in the most efficient manner possible. Accordingly, the self-inflicted inefficient design of AMSC cannot be used as a justification for grabbing more spectrum, or for extending an already debilitating pseudo-monopoly.

### **III. AMSC LACKS THE LEGAL QUALIFICATIONS AND THE PUBLIC INTEREST BASIS FOR THE APPLIED FOR MODIFICATION**

AMSC is a deficient structure, as has been recognized by the U.S. Court of Appeals. Even the FCC, in its Tentative Decision, justifies AMSC's structure only on the basis of ITU coordination expediency, not intrinsic appropriateness. To extend this monopoly structure into a new frequency band is blatantly against the public interest in "open skies" competition, and is illegal based on the U.S.

Court of Appeals decision and the subsequent Commission justification explained in the Tentative Decision.

When monopolies reign, the public suffers. Dealing with AMSC is an exercise in frustration and arrogance. Even if it was necessary, due to the pressures of the ITU Advance Publication and Coordination process, to convoke a limited upper L-band monopoly, there is no logic or reason to extend this structure into any other frequency band. As soon as AMSC perceived Satellite CD Radio as a possible competitor in providing point-to-multipoint digital services, it moved to block us off by asking the FCC to allocate the frequencies we first pioneered to themselves. This is fundamentally unfair.

Satellite CD Radio believes the public interest deficiencies of AMSC's Application and System are made apparent by how AMSC responds to competition. When Satellite CD Radio petitioned for the 1500 MHz band, then AMSC followed with its own claim to this band, on a monopoly basis. When Ellipsat applied for the RDSS band, then AMSC replied with a lawsuit against Ellipsat's President. When Motorola requested the RDSS band for a competitive service, AMSC responded with its own petition for the RDSS frequencies, on a monopoly basis. Such anti-competitive behavior is manifestly contrary to the public interest.

One must wonder why other technologies do not require a monopoly license, but why the purported monopoly licensee, AMSC,


requires all the other technologies' frequencies? The apparent answer is that a monopolist seeks to maintain its monopoly, even if that means using an inefficient spectrum-guzzling technology and a horde of FCC lawyers as its tools. However, such objectives and tools are neither legal nor proper.

The Commission's statutory mandate is to make use of the radio waves in the public interest, convenience and necessity, and to encourage new technology. Unfortunately for AMSC, its geostationary MSS configuration is, in the satellite world, considered old technology. And it is NOT in the public interest to waste spectrum to the preclusion of other truly new technologies, such as Satellite CD Radio.

Finally, a monopoly consortium which, by the FCC's own reasoning, is not consistent with its prevailing open skies legal paradigm, may be justified on exception due to the pressing exigencies of ITU frequency coordination. Absent these exigencies, such as for the frequencies applied for by AMSC, that same monopoly consortium is illogical at best and illegal at worst.

Accordingly, for all of the above reasons, Satellite CD Radio opposes the Petition of AMSC and Petitions to Deny its Applications consolidated with its Petition as lacking legal qualification and being in flagrant disregard of the public interest and the Commission's satellite communications precedent.

RESPECTFULLY SUBMITTED,

  
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October 16, 1991

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